

ABSTRACT

A floating gate and fabrication method thereof. A semiconductor substrate is provided, on which a gate dielectric layer, a conducting layer, and a patterned hard mask layer are sequentially formed. The surface of the conducting layer is covered by the patterned hard mask layer to form a gate. The conducting layer is etched to a predetermined depth to form an indentation using the patterned hard mask layer as a mask. The conducting layer is oxidized to form an oxide layer on the surface of the conducting layer. The oxide layer and the conducting layer are etched to form multiple tips using the patterned hard mask layer as a mask.